Claims: We claim:

1. A non-shrouded device comprising:

a plurality of individually programmable light emitting diodes;

a plurality of convex lenses, each associated with a respective one of the programmable light emitting diodes;

a test pattern disposed among the programmable light emitting diodes;

wherein the light emitting diodes are programmed to focus light in a variable circular or other pattern whose diameter is such that the focused light pattern image is projected at different distances outside the macular area of the subject's retina, and such that a variable programmable brightness of each individual light emitting diode is used to determine specific points at which the subject is no longer able to accurately differentiate the test pattern, known as the end point response;

wherein contrast sensitivity, accommodation, convergence and acuity of the subject are computed from said specific points; and

wherein the test pattern is used to determine an optimum sunglass or filter color and density for the subject based on said computed contrast sensitivity, accommodation, convergence and acuity.

2. A device as in claim 1 wherein:

test patterns which exhibit various spatial frequencies are used to determine the subject's end point response to spatial frequency under varying conditions of illumination color and intensity;

filters or sunglasses of varying color and density are interposed between the subject's eye and the test pattern to determine the range of color and density

that will allow the subject to have maximum visual acuity, light adaptation, accommodation, convergence and pupil response;

saturation of different colors of light provides information regarding response and visual comfort for the optimum selection of tinted or special filter lenses for reading, sports, medical needs, occupational safety, driving and improved visual function for accurate comfortable vision.

3.   A device as in claim 2 wherein:

tri-stimulus light emitting diodes capable of emitting red, green and blue light in various amounts to render white light or variations of colors as programmed by a microprocessor for a specific test interact with filters of various colors, polarizations and densities interposed between the subject's eyes and the device to provide information regarding the health of the subject's retina, light adaptive system, cornea and other ocular media by measuring colored or white light saturation and scattering over various adaptive periods.